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Palladin Regulates Cancer Metastasis Via Actin Cytoskeletal Remodeling

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The migration of both normal and cancer cells is a complex process that involves dramatic remodeling of the actin cytoskeleton. Currently 90% of cancer deaths result from metastasis, the migration of cells into the bloodstream, and there are currently no therapeutic agents that directly target this step of cancer progression. Actin-cytoskeleton dynamics are regulated by a large number of actin binding proteins (ABPs), and some of these proteins are specifically upregulated during metastasis. One such protein is palladin, which binds directly to actin as well as many other ABPs and has been shown to play an active role in the organization of cellular actin networks. Our hypothesis is that increased amounts of palladin result in altered actin dynamics that promote metastasis of cancer cells. Our recent research results show that palladin has direct role in actin polymerization and alters the structures of resulting actin filaments.